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PATENT APPLICATION

RESPONSE UNDER 37 CFR §1.116
EXPEDITED PROCEDURE
TECHNOLOGY CENTER ART UNIT 2674

AF/2674
61

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of

Masafumi FUKUDA

Group Art Unit: 2674

Application No.: 09/964,437

Examiner: X. Wu

Filed: September 28, 2001

Docket No.: 110738

For: DISPLAY DRIVER AND DISPLAY DEVICE USING THE DISPLAY DRIVER

RESPONSE TO FINAL REJECTION

RECEIVED

SEP 30 2004

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Technology Center 2600

Sir:

In reply to the June 28, 2004 Office Action, reconsideration of the above-identified application is respectfully requested. Claims 2, 3, 6, 7, 9-19 and 22 are pending in the application.

It is gratefully appreciated that the Office Action indicates that claims 2, 3, 6, 7 and 9-17 are allowed. However, for the reasons discussed below, it is respectfully submitted that claims 18, 19 and 22 distinguish over the applied references.

The Office Action rejects claims 18, 19 and 22 under 35 U.S.C. §103(a) as being unpatentable over Misawa (U.S. Patent No. 5,250,931) in view of Kudo (U.S. Patent No. 6,118,425). The rejection is respectfully traversed.

In particular, neither Misawa or Kudo, either alone or in combination, disclose or suggest a display device, wherein at least a voltage supplied through an interconnecting line is

gray scale driving voltage, and impedance conversion is performed at each of the display drivers, as recited in independent claim 18, and similarly recited in independent claim 22.

The Office Action admits that Misawa does not specifically disclose that display drivers include a voltage-follower-type operational amplifier circuit. Misawa also fails to disclose that impedance conversion is performed at a plurality of display drivers.

The Office Action alleges that Kudo compensates for the deficiencies in Misawa because Kudo discloses in Fig. 31 that impedance conversion is performed at each of the display drivers. On the contrary, Fig. 31 of Kudo discloses an example of the power supply 516 shown in Fig. 22. As shown in the power supply 516, the data voltages 805 to 809 for driving the liquid crystal and a scanning Vy0 voltage 802 for driving a liquid crystal are subjected to impedance conversion by a voltage follower circuit using the operational amplifier 811. See col. 17, lines 28-29 and col. 18, lines 11-16 and Fig. 31. However, the impedance conversion in Kudo is not performed in the data driver 503 and is instead performed in the power supply 516.

In contrast to the claimed invention, neither Misawa or Kudo, either alone or in combination, disclose or suggest a display device, wherein at least a voltage supplied through an interconnecting line is gray scale driving voltage, and impedance conversion is performed at each of the display drivers.

In fact, Kudo is not even concerned with performing impedance conversion in a plurality of display drivers and does not generate gray scale driving voltages to prevent a deviation in bias and block irregularities on the display screen to eliminate a deterioration of display screen quality. Thus, because input impedance of an operational amplifier is not increased in the data driver 503 in Kudo, any device that resulted from a combination of Misawa and Kudo would have a voltage drop between the power source and respective data

drivers. Moreover, the resulting device would also deteriorate the display quality of the display device because it would lack the features discussed above.

Thus, it would not have been obvious to combine Kudo with Misawa to arrive at the claimed invention. Accordingly, it is respectfully requested that the rejection under 35 U.S.C. §103(a) be withdrawn.

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 18, 19 and 22 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact Applicant's attorney at the telephone number listed below.

Respectfully submitted,



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Date: September 28, 2004

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